What is a Scientific Assessment[1]?

- In general, a scientific assessment such as the National Climate Assessment, is a critical evaluation of information for purposes of guiding decisions on a complex issue. The stakeholders, who are typically decision makers, are often actively engaged in defining the scope.
- Assessments are policy relevant, but not prescriptive.
- Assessments are conducted by a credible group of experts with a broad range of disciplinary and geographical experience, in a balanced and transparent way.
- Assessments summarize complexity by synthesizing and sorting what is known and widely accepted from what is not known (or not agreed).
- Assessments relate to the situation at a particular time and in a geographical domain.

An assessment is **not**…

- A research project per se;
  - Instead, most data should already be collected, and in the public domain.
  - However, new understanding results from synthesis, applications of new research methods, filling gaps in data, applications of new tools and approaches, and these are research activities.
- A review paper;
  - Rather, it should be focused primarily on implications of the science for management and policy and not limited to previously published ideas. Thus, clearly labeled and consistently applied judgment about the importance of, and confidence in, information, is required.
- An advocacy piece;
  - Instead, it must be balanced and evidence-based.
- An opportunity to promote your pet topics or own work.

How does an Assessment produce findings?

- Assessments are a synthesis of information from a broad range of inputs, including data sets, modeling results, topical papers, review and synthesis papers, case studies, expert elicitation, and other sources.
- Experts representing a variety of disciplines, including science and decision making, discuss and make judgments about the ultimate importance and quality of information, and about ways to characterize uncertainty and confidence.
- Assessments represent consensus findings that are agreed upon by a large number of authors and reviewers.

Assessment Characteristics[2]

- Assessments often involve stakeholders in preparation and review because ownership of the process and results by relevant parties is essential and that is most likely when they are involved from the beginning of the process
- Should be conducted through an open, transparent, representative and legitimate process
- Present policy relevant, not policy prescriptive, options
- Technically accurate, with replicable findings
- Well documented
- Incorporate different viewpoints – multiple sectors, opportunities as well as problems
- Focus on a particular scale, for example, can focus on a local, regional and/or global perspective
- Can identify key vulnerabilities (likelihood/risk and consequence) and adaptation/mitigation activities in response to them
- If the assessment is focused on broadening understanding (rather than developing a focused outcome such as a research agenda), includes an active communication strategy throughout the assessment process

[1] This document was modified from the original by David Stephenson (University of Reading, United Kingdom)

[2] a useful reference is the National Academies report - http://www.nap.edu/openbook.php?record_id=11868&page=R1

Review vs. Assessment

	Review	**Assessment**
Audience	Scientists	Decision-makers
Done by	One or a few	Large and varied group
Topic	Simple and narrow	Broad and complex
Identifies gaps in	Research: curiosity-driven	Knowledge for implementation: problem-driven
(Un) Certainty statements	Not required	Essential
Judgment	Not required, or if present, unclear criteria	Required, clearly flagged, well-defined criteria
Coverage	Exhaustive, historical	Sufficient to deal with main range of uncertainty
Synthesis	Not required	Essential to reduce complexity